

PLASMA-DEPOSITED COATINGS, DEVICES AND METHODS

ABSTRACT OF THE DISCLOSURE

5 Coatings, devices and methods are provided, wherein the contacting surface of a medical device with at least one contacting surface for contacting a bodily fluid or tissue is modified by plasma treatment in a plasma including nitrogen-containing molecules and oxygen-containing molecules and by application of a biologically compatible coating, preferably by plasma treatment in a plasma including polymerized hydrocyclosiloxane monomers. The nitrogen-containing molecules include NH_3 , $(\text{NH}_4)^+$, N_2O , NO , NO_2
10 and N_2O_4 , and the oxygen-containing molecules include O_2 and O_3 . The plasma-modified contacting surface exhibits decreased adhesion of at least some mammalian cells, such as platelets and leukocytes, decreased restenosis when used with stents, and increased apoptosis. Additional layers may be applied, including amine-providing groups such as N-trimethylsilyl-allylamine, polyoxyalkylene tethers, and bioactive compounds.

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